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Canadian Association for the Prevention of Tuberculosis...

What you should know about tuberculosis...

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WHAT YOU SHOULD KNOW ABOUT TUBERCULOSIS

USEFUL FACTS FOR THE
TUBERCULOUS AND THOSE
LIVING WITH THEM

Reprint of Pamphlet prepared by the Canadian Association for the Prevention of Tuberculosis

ISSUED BY THE DEPARTMENT OF HEALTH, CANADA
1922

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Prefatory Note of Fifth Edition

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Copies of this pamphlet and other literature upon the same subject may be obtained free of charge by writing to

THE CANADIAN ASSOCIATION FOR THE PREVENTION OF TUBERCULOSIS,

DR. ROBERT E. WODEHOUSE, Secretary, Ottawa,

OR

DR. J. A. AMYOT, Deputy Minister,

DEPARTMENT OF HEALTH, OTTAWA, CANADA

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Useful Facts for the Tuberculous and those living with them

I. DO YOU VALUE YOUR HEALTH?

If so, what follows will interest you; read it carefully; it will pay you.

II. WHY ARE PEOPLE AFRAID OF TUBERCULOSIS?

Because every third person between fifteen and sixty dies of it, or every fourth person between twenty and fifty; or, in other figures, it kills about one in ten of all people who die at any age. Also because it disables and renders useless and helpless those who have it, and is often the means of beggaring their families.

III. WHY SHOULD YOU BOTHER YOURSELF ABOUT IT IF YOU ARE NOT SICK WITH IT?

Because you, or some of your family, may develop it at any time; therefore, by knowing something about it, you can greatly lessen the chance of getting it, or should you get it, can lessen its danger to yourself and your children. Further, every man and woman worth the name wants to help others who are in trouble. This pamphlet will teach you how to do that.

IV. WHAT IS TUBERCULOSIS?

Tuberculosis is a disease caused by the growth in your lungs, or, less commonly in other parts of your body, of a minute microscopic fungus, plant, or germ called the tubercle bacillus. This germ produces and throws off poisons which kill the structures around it. Multiplying by division, it spreads slowly or rapidly, through the whole lung until finally it kills the person in whom it grows. In recent years it has been shown that **the germ frequently gets into the body in childhood,** but since it does not grow easily in the human body, many of these germs are killed at once by the tissues. Others lie inactive for a long time in the glands in the chest and do not develop until by some chance the resisting power of the body is lowered sufficiently for the germ to begin to grow, **the thoroughly healthy body not being a favourable growing place.** Overwork, dissipation, dark, dirty homes or work-places, bad or scanty food, late hours, drunkenness, and certain sicknesses, such as grippe, measles, whooping cough, pneumonia and typhoid fever, and also frequent and closely repeated pregnancies, weaken the body, give the germ the opportunity it needs, and enable it to develop. In bodies thus weakened, the germ can flourish, and, if they are not strengthened in time by proper living, the disease will advance. This advance is usually slow and gradual, so that the patient may live from two to ten years, but in the more rare galloping form its advance is rapid, so that the patient dies in from six weeks to a year.

The germ and its poison.

Fortunately for us the germ of tuberculosis does not grow easily in the human body. **All animals have a certain degree of resistance to the attack of the germ.** In some this resisting power is very low; in some very high. The guinea pig, for example, has almost no resistance to this disease, while the goat has so high a resistance that it is very hard to infect it at all. Among human beings the Indian and the Negro usually show a very low resisting power, and when infected, are apt to have the rapid and dangerous form of the trouble. The average white man on the contrary has considerable resisting power, and it takes repeated, prolonged exposure and unfavourable conditions of working and living, to infect him, except in early childhood, when, it should never be forgotten, infection is very easy.

What is resistance?

The first manifestation of the activity of the germ in the body is the formation, usually in the lungs, of a small grey lump, which we call a tubercle. This is about

The Germ Conquering—Caseation.

the size of the head of a pin, and examined under a microscope, it is seen to consist of a cheesy mass of dead tissue with germs lying in it. The formation of this dead tissue by the poisons of the germ is called "Caseation." Surrounding the cheesy centre is a double layer of cells thrown out by the body to protect itself from the invading germ. If the poisons of the germ are sufficiently strong, or if the cells surrounding the germ are sufficiently weak, they too will be destroyed, and by degrees successive layers of tissue will be killed, the trouble thus spreading at the outer border through larger and larger areas of tissue until finally the whole lung is involved. When the mass of dead tissue reaches an air tube it is coughed up and leaves a small cavity behind. When this cavity becomes bigger, other sorts of germs from the outside air may get into it and help the tubercle germ to spread destruction, thus finally producing what we call "Consumption."

If, however, the body is put under favourable conditions of feeding, of fresh air, and wise living, its cells will be so strengthened that when the poison of the germ attacks them, it will not be able to kill, but only to irritate them.

The Germ Defeated—Fibrosis.

This irritation causes them to change from simple round cells to long cells, which gradually turn into scar tissue. Under favourable conditions this wall of scar tissue slowly gets thicker and thicker, and while this barrier of scar is being built around the trouble, Nature is busy depositing chalk in its centre. If this process goes forward successfully, in the course of two or three years there is built up around the disease a strong wall of scar tissue. This process of scar tissue formation shutting in the trouble is what we call "Fibrosis," and it is by such Fibrosis that the body manages to overcome the germ and to free itself from active evidences of disease. Hence the disease is really a struggle between "Caseation" and "Fibrosis," and it is only by doing everything we can to favour a satisfactory Fibrosis that we can conquer the trouble. From this it is evident that our efforts at treatment must be chiefly directed to strengthening the patient's body, for whatever strengthens this, strengthens the cells which compose it and enables them to build up a strong wall around the disease. The disease can be compared to a battle between the germs which have gotten into the body and the cells which make it up. If these cells are well nourished and cared for they will win, and will shut in and finally kill the germ; if not, the germs will by degrees kill them and cause the patient's death.

Once the disease has attacked the body, it always leaves scars behind, as a careful examination of dead bodies will show.

Since, however, with careful living, these scars will remain firm and strong, enclosing the trouble, in which by degrees the germ may die out, patients may justifiably be considered "cured"; **but it must never be forgotten**

Possibility of Cure.

that as a result of dissipation, overwork, or sickness, the disease may break out again. The examination of the lungs of those who have been healthy, and have died of some other cause, will show that a very much larger number of people have had active trouble at some time in their lives than ever die of it, the scars of old healed disease being found in such cases.

Tuberculosis is not like typhoid fever or smallpox, or measles, or scarlet fever, which diseases are easily and quickly taken if you come in contact with those who have them, and which develop in from one to two weeks. It is caught much less easily, takes a long time to develop after it is caught, and can be prevented from developing, very often, by wise life, or can be cured or arrested in a large number of cases if it has not gone too far. Therefore, it is not necessary to despair and give up hope, if you, or some one you love, have caught this disease, but it does demand an immediate improvement of your ways of life, and of your surroundings, so as to strengthen your body to the utmost in order that it may be able to shut in, wall up and conquer the trouble. The cure is not as complete as it is in pneumonia, for instance, where after the disease is cured there is no trace of it left in the body. In tuberculosis **scars are always left** and **germs for a long time can be found in these scars,** and **unwise living can enable them to break out again,** but, as ample

experience has shown, it can be so successfully walled in that all symptoms of its presence may be lost, and the patient can resume a normal and useful life if only he is willing to live wisely and prudently. **However, a relapse is always possible after an arrest, even after many years.**

V. HOW AND WHEN DO PEOPLE TAKE THIS DISEASE?

"The conviction has gradually been strengthened that the first infections from tuberculosis often occur during infancy and childhood, and that extreme care is required if this is to be avoided in tuberculous families." . . .

Childhood Infection.

"It is now generally believed that the first seat of the disease is in the lymphatic glands, where the bacilli may lie quiet for many years. If the number and virulence of the bacilli are sufficiently great, disease may follow infection in a short time; otherwise, complete healing may occur without the development of any recognizable symptoms of disease. It seems probable that many of those who develop the disease in adult life have carried the latent infection since childhood and have not received a new infection when symptoms of the disease appear.

"It has also been found by experiment that it is difficult to reinfect an animal that has already been inoculated with tuberculosis. Hence, it is inferred that some degree of immunity must be thus produced that may serve to ward off bacilli which might find lodgment in an individual not previously infected. Therefore, it will be understood how mild infections, which are healed, and are at present in most persons who have reached adult age, may, and presumably do, offer some tubercle protection against further limited invasions of the bacilli. While persons are in good health, the protection thus offered is an advantage, having some resemblance of vaccination, but only very limited in nature and not complete. Prolonged or intimate exposure, however, or exposure to a severe type of tuberculosis, may result in a new infection, even of those who have overcome a previous mild infection. It is, moreover, by no means certain that in debilitated conditions due to other diseases, to dissipation, or to bad environment, new infections may not occur. We know positively that the first childhood infection may under such circumstances break out anew and thus become a doubtful advantage, a real sword with two edges.

Danger of Reinfection.

"Considering the natural and acquired resistance to infection which is unquestionably possessed by adults, much unreasonable fear, or 'phthisiphobia,' has prevailed in late years. The results of this have sometimes been a deplorable neglect or persecution of consumptives. Because there is no precaution too great for the protection of the young and delicate, this does not justify healthy adults in exaggerated fears for their own safety."*

Unreasonable fear of Tuberculosis.

As has been said, this disease is probably caught in most cases in childhood and lies inactive in the body for a longer or shorter time until the conditions are favourable for it to develop, **but it can be acquired at any time or age.** Since the germ can, and often does, lie quiet in the body for many years before it develops and is discovered, it is usually difficult or impossible to say just when or under what circumstances the person became infected. It should always be remembered **that it is almost always a house or indoor infection,** and that it is rarely or never caught outdoors, where the sunlight, which is our best disinfectant, quickly kills the germ. Thus the great and real danger is from living with careless, dirty consumptives, and especially in dark, damp, dirty, or ill-ventilated houses, sleeping and living rooms, workshops, factories, or stores, which have become infected with the germ by the sick people's careless spitting habits. The germ, which is a microscopic rod, invisible to the unaided human eye, is found in millions in their spit from very early in the disease, and it is through this spit almost alone that it reaches others. **If we could collect and destroy all the spit of such patients and make them cover their mouths when they cough,**

Tuberculosis a house disease.

* Dr. Herman M. Biggs, *Journal of the Outdoor Life*, March, 1914.

we could almost wipe out the disease. Fortunately, when people spit outdoors the danger is not quite so great since, sooner or later, the sunlight will destroy the germ; but when they spit indoors, as many do, where the sun cannot get at the germ and kill it, it may remain alive and active for a long time. **Hence, people who spit in this way are a terrible danger to all who live with them,** or to those who stay in the places where they live or work. Many people do not know that they have tuberculosis, but think they have only a "bad cough," when they already have the disease and are bringing up the germs in their spit. **Every one, therefore, who spits or has a cough should be just as careful about his spitting as if he knew that he had tuberculosis.** If those with germs in their sputum spit on floors or sidewalks, the sputum will be ground under foot, blown around as dust in the air, and inhaled by other people, and will finally reach their lungs. Even when they use spittoons, unless the water be carbolized, flies will get at the sputum and carry it on their feet to other people's food, and thus possibly infect them.

In the home the chief danger, as has been said, is to children, although adults may also become infected. The two chief sources of infection for children are, first, consumptive relatives or fellow lodgers, and secondly, infected rooms, dwellings, or dishes. Children are apt to be kissed and fondled, and in this way the germs may be carried directly to them. Again, they play around on the floor, too often infected with spit, and thus acquire the trouble. Therefore, the kissing and fondling of little children by sick relatives and friends should be prohibited, as well as the bad habit of feeding them from spoons and plates of such people. Indeed, as far as possible, **children should be kept away from their sick relatives as long as the latter cough or spit.**

Infection from careless persons in the home.

No one should move into a new lodging without finding out first something about the last lodgers, and making a careful disinfection of the rooms, if the previous residents were sick or coughed badly. In the dark corridors of many houses the germ may live for a long time and unfortunately many people who would not spit on the floor of a bedroom will do so on the floor of a corridor. If every one who reads this will see to it that his home is kept strictly clean, that as much sunlight as possible is admitted to it, and that no one is allowed to spit there carelessly, it will do much to lessen his family's danger of catching this disease.

The danger of infected rooms.

The dry sweeping of rooms should never be allowed, as it raises clouds of dust, which may contain the germs which are thus breathed directly into the lungs. Therefore all broom sweeping should be preceded be strewing the floor with damp sawdust, old tea leaves or wet paper or something similar, and if it is at all possible, vacuum sweeping or cleaning should be used.

Dangers of sweeping and dusting.

Outside of the home, there is much danger in shops, workshops, factories and mills. Experience shows that both clerks and workmen too often spit promiscuously on the floors of their work places, and since many of them, often without knowing it, have the disease, **they infect their fellow workmen,** and every year many Canadian labourers are made sick in this way. If only our labour unions knew the great danger to their members from the careless spitting habits of such workmen, they would insist that every one who spits should use a spittoon containing water with a tablespoonful of carbolic acid to the pint, and they would see to it that those who persist in breaking this rule should be dismissed from the union. In this way they could greatly lessen the number of their members who get this disease.

How working men infect one another.

Infection also comes about from a patient spraying out and scattering around fine drops of moist spit when he coughs and sneezes. This could be entirely avoided if every one formed a habit of covering his mouth with a handkerchief at such times. This danger is so real that public opinion should enforce such a custom.

Infection from a coughing patient. "Droplet Infection."

The germ may also be taken into the body in uncooked cow's milk. Cows frequently have tuberculosis and the germ may get into the milk, sometimes in large numbers. While in grown people this is not a common source of infection, it is a common source **in little children** who drink much uncooked cow's milk. The germs are carried by the milk into the bowels through whose walls they pass and enter the system through the lymphatics, lodging usually in the glands around the roots of the lung, or in those attached to the intestines. Therefore, unless one is certain that the cow which supplies the milk is free from tuberculosis (which can be told by a test that a good veterinary doctor can easily make), the only safe thing is to pasteurize or boil all milk which is used by the children of the household.

Infection through Milk.

There are a number of other sources of infection, but they are not very important and we need only mention a few, such as the kissing of consumptives; the regular use of their unwashed dishes or clothing, and careless contact with the pus or other discharges from tuberculous sores. It has been shown that there can be a danger of infection from the unwashed hands of consumptives, and all such patients should wash their hands, faces and mouths frequently.

Other sources of infection.

It is now known that tuberculosis is not hereditary, and that it is practically never handed on from the parents to the child before birth. We recognize, on the contrary, that the infection comes from tuberculous parents or relatives, who usually infect the healthily born child a short time after birth, if their habits are careless. Even with much care it is difficult to avoid the infection of the children by their tuberculous parents. When we see a whole family die of this disease, one after another, it does not mean that they inherited it from their parents, but that there was carelessness in the family and that each child in turn acquired the disease from the careless parent, brother or sister. However, in families in which there has been much tuberculosis among the parents or grandparents, there is at times found a lowered resistance to the disease so that the children in such families must be brought up with especial care as to their surroundings and life.

Hereditary Infection.

As has already been shown, when this disease is acquired, it does not usually develop at once, but may lie latent in the body anywhere from one to twenty or more years. During this time it may sometimes cause some symptoms which only a doctor would recognize, and which pass off so soon that the patient pays no attention to them. Thus people who are subject to repeated spells of "grippe" or colds every winter, or to attacks of pleurisy now and again, those who suffer from periods of "rundownness" or who are obstinately dyspeptic and habitually pale and below normal weight, or are chronic coughers and spitters, are very apt to be really tuberculous, and often, unconsciously, hand on the disease by their cough to others.

Latent Tuberculosis.

From what has been said, it is plain that, **if all people who have any spit would destroy it carefully, would cover their mouths when they cough, would refrain from kissing and would keep their hands clean, and if all milk, for children at least, were boiled or pasteurized before use, unless it came from veterinarily tested cows, it would not be long before we would get rid of the trouble entirely.**

The duty of the patient to the community.

VI. HOW CAN YOU AND YOUR FAMILY KEEP FROM GETTING THE DISEASE?

See that you and your children **do not move into any house, room or workplace where a consumptive or a person with a chronic cough has lived, worked or died,** until it has been carefully disinfected by the Board of Health or your doctor. **Any room or house can be made perfectly safe** without very much trouble. **First,** by formaldehyde disinfection. Hang up by two corners in each room a sheet thoroughly wet with a quart of 40 per cent formaldehyde solution,

Thorough disinfection of homes.

which can be gotten cheaply at any drug store, after first shutting up all the doors, windows and fireplaces, and stopping up all the cracks with strips of newspaper put on with starch paste. Keep the room shut for twenty-four hours, and then keep all windows wide open for two days. There are several better but more expensive methods of disinfection with formaldehyde, which you can learn of from the Board of Health or your doctor.

Second, and **far more important,** by thorough scrubbing with hot carbolized soap suds and water, followed by exposure to fresh air and sunlight. **Remember, that mere fumigation with formaldehyde, without vigorous application of soap and water, and the letting in of sunlight and air, will not kill the germs of tuberculosis.** Therefore, after the formaldehyde disinfection, wipe down all the walls and ceilings carefully with cloths dampened with some disinfectant solution; then scrub with hot water (in which put two tablespoonfuls of carbolic acid or of chloride of lime to every quart) all the floors and woodwork. Then open the windows to admit sunlight and air for two days. After such a procedure you need have no fear of infection in that room.

Stop promiscuous spitting.

See that no one in your house or in the place where you work, whether he thinks himself well or not, is ever allowed to spit on the floor, or anywhere where his spit cannot be burned up or thrown down the sewer.

Light, air and cleanliness.

See that your home or workplace has windows that open outdoors in each room, and never take a room whose windows open on a narrow airshaft, or which is windowless. These windows should be opened often and far enough to provide a good supply of fresh air, and your rooms and corridors should be kept as clean as scrubbing brush, hot water and sunlight can make them.

Care of the Body.

Keep the bodies of yourself and your family strong, healthy, and resistant by good, properly cooked, even if very simple, food; by taking at least one warm bath a week; by the avoidance of late hours, dissipation, drink, and unduly long hours of work, and by spending all your rest hours as far as possible outdoors and in healthful amusements.

Clothing and exercise.

Never cramp your lungs by tight or too heavy clothing, or by stooped shoulders, or by stopped-up noses or throats, which prevent proper air getting to your lungs. If you or your children have stooped, hollow, badly developed chests, practice regular deep breathing, keeping the shoulders back, and do easy gymnastics to broaden the chest. If your nose seems stopped up, go to a nose and throat doctor, or to a dispensary, and have it opened by proper treatment.

Keep your children away from consumptives.

Keep your children out of sick rooms, especially those of people who have coughs, because children, as has been said, get this disease easily. While you need never be afraid of the careful cleanly tuberculous patient, avoid unnecessary contact with **careless** consumptives, as it may be dangerous.

VII. IF YOU CATCH THE DISEASE, HOW CAN YOU FIND IT OUT SOON ENOUGH TO CURE IT?

Remember that this disease can be cured in the majority of cases if it is discovered early, while if it is not found out until it is advanced, it is hard to cure it at all.

Early discovery the great essential.

In early cases, proper food, rest in the open air by day, and, if possible, by night; clean surroundings, and, if at all possible, the help of an intelligent doctor, will do wonders. Since if tuberculosis is to be cured, it must be found out early, it is very important to understand the early symptoms which warn us of its presence.

Unfortunately, many doctors do not give especial attention to this disease, and overlook it until too late, or mistake it for other things, especially "grippe," "a chronic cold," malaria, stomach trouble, and nervous prostration. A careful doctor will always strip your chest to the skin for examination, and no **examination through the clothes is of any use at all.** Further, he will study your fever frequently for some days or for a week, will have your sputum examined in every case, and will go very carefully into the past history of your case and your surroundings. If these things are not done, it will be impossible to find out the trouble in any but advanced, hopeless cases. If you cannot get a doctor to examine you in this thorough way, go at once to the nearest dispensary and have your case studied carefully by some one familiar with this trouble.

If you cannot get expert advice, an intelligent study of your symptoms may make you reasonably sure of what you have.

Early Symptoms.

The disease may begin in different ways. The most common early symptom is possibly a slight cough, usually, but not always, in the morning, and which will not yield to treatment. **Every cough that lasts more than three weeks should be regarded as suspicious.** A chronic cough with spitting which has lasted for years, even though it has never made its owner sick, is very suspicious.

Often, however, before a cough appears there are other symptoms which warn us, and of these none is more useful than **an unwonted sense of tiredness,** exhaustion, or weariness, coming on without any good reason. This is often supposed to be only laziness, or is ascribed to "malaria," "nervous prostration," or to other conditions. It usually comes on in the afternoon between 2 and 6 o'clock, and may be accompanied by flushed cheeks, bright eyes, and feverishness. Often the patient will waken just as tired as when he went to sleep. Just as with the cough, so **persistent weariness should cause you to consult your doctor.**

Again, **a long-continued hoarseness,** which does not leave is suspicious. An important symptom of the trouble is a steady and unexplained **loss of weight,** and this should always excite one's thought. A very suggestive early sign is **loss of appetite** or **persistent indigestion** or "stomach trouble." The indigestion may have lasted for years and have had all sorts of treatment, and when a cough appears it is spoken of as a "stomach cough"; but the only safe way is to have a careful physician investigate why you are having indigestion and why you cough. Frequently the trouble begins with a **slight blood-spitting,** which may not be followed for a long time by the development of real trouble, and where the doctor can find no changes in the lungs, but such blood-spitting or blood-streaked sputum, is **practically always** a sign of tuberculosis and **must never be neglected** or explained away without a long and careful study of the case. **Night sweats** will at times be the first symptoms, but they are usually preceded for a long time by other symptoms; and are not a common early symptom. **A persistent pain in the chest,** especially in the shoulder, should be carefully investigated, and not passed off as "rheumatism" or "neuralgia," as at times it is the first manifestation of a tuberculous pleurisy of the top of the lung.

Fever is not usually an early symptom, unless we use a thermometer to find it, but at times the patients will notice that they are hot and flushed in the afternoon, and the thermometer will show that while the temperature is normal, or below normal in the morning, in the afternoon it rises from a degree to a degree and a half. Usually after the cough has lasted a little while some **spitting** is apt to begin, and this must never fail to be carefully examined often under the microscope by the local Board of Health, or by your doctor. If the germs are found, it is certain that you have the trouble, but **even if they are not found it should never be forgotten that this does not prove the disease is not present,** for the germs are often absent from the sputum for a long time.

Any or all these symptoms are suspicious, and should cause you to consult a careful doctor. If you cannot get to a doctor, you are pretty safe in taking it

Don't wait until it is too late.

for granted that when a person has a persistent slight cough, with loss of weight, appetite, and strength, with probably some tiredness and possibly some slight sweating, he has the beginnings of this disease. Remember also that fever, chills, and sweats are just as often caused by tuberculosis as by a malaria, sometimes known as "chills and fever."

Even if the doctor cannot find the signs of tuberculosis when some of these symptoms appear, and it is very often impossible to do so at this time, it is much safer and wiser not to wait until he can find them before taking precautions. In some cases this may be a matter of months and may make it too late to do any good. Therefore, in the face of such symptoms, whatever the doctor finds, alter your methods of living at once, increase your fresh air, improve your food, lengthen your hours of sleep and rest, and, if at all possible, lessen your hours of work. Thus you may strengthen your body to the point where it can throw off the beginning disease. **He who insists on being absolutely sure that he has the disease before he begins to treat it, will often throw away his best chance for getting well,** for when there are such unmistakable signs as hollow cough, abundant spitting, high fever, profuse sweats, flushed cheeks, and great loss of weight, it is usually very much harder, if not impossible, to get a cure.

VIII. IF YOU HAVE CONTRACTED THE DISEASE, CAN YOU GET WELL AND HOW?

In any given case a sensible doctor can usually tell you whether there is a chance of your getting well. As has been said, early light cases are curable in the majority of instances. More advanced disease, with careful treatment, yields a good percentage of recoveries, and it is worth remembering that a **certain number of very bad and apparently hopeless cases do, at times, recover when it seemed impossible for them to do so.** Therefore, however bad the outlook, it is sensible not to give up hope, but to start right in to make the bravest fight you can.

Recovery depends on YOU.

In any case your chance of getting well depends largely on the early discovery of the trouble and on your grit and courage. A brave and determined patient with a bad trouble generally stands a better chance of recovery than a silly, weak-willed one, with much less trouble.

Tuberculosis of the lungs may appear in many forms, most of them tending to be chronic, slow, and long drawn out; of these a large number are curable; a few are acute, rapid, galloping, and these are usually hopeless from the start, while there are some intermediate cases which look very bad in the beginning, but which, with great pains and care, may finally be cured. Of the light and medium cases, discovered early and which can get good conditions of life and sanatorium treatment, the majority can be cured so as to allow of a return to suitable work and self-support, **provided there is a proper care of the future life and avoidance of harmful influences.** Even in more severe and advanced cases with much trouble, in the lungs, by a course in a good sanatorium, followed by careful life at home, a fair degree of health may often be regained, so that **one need never lose hope.**

Your chance of a cure.

The length of time it will take to be restored to working efficiency varies according to the severity of the case; from six months in the most favourable cases to two or three years, or more, in obstinate ones. We know that a good number of cases can be and are cured; and since some very severe cases recover, **it is always right to hope and strive to get well even if you seem to be very sick.**

How long will it take?

Getting well does not mean the taking of a lot of medicine. **There is no medicine which by itself cures tuberculosis while the patient keeps on living the old kind of life. Nothing has done more harm in this disease than the** habit of taking patent medicines, which make lying claims to cure the trouble when in fact they only stop the cough and pain by the opiates in them, which make death easier but not any less sure

Avoidance of drugs.

or quick. Hence, any medicine which claims to cure tuberculosis is, on the face of it, a fake and its maker is not to be trusted. **Avoid all such if you value your life.** Some medicines which your doctor can give you are a help, but you are safer with no medicine at all, unless one recommended by your physician.

When an intelligent doctor has found out your trouble, make every effort to get into a well-conducted sanatorium for tuberculosis; or, if this is impossible, at least to attend the tuberculosis dispensary in your town regularly and join the tuberculosis class, if there is one. If you cannot afford to go to a special climate and get there comfortable and proper conditions, go to the provincial, city or county tuberculosis hospital. The cost of treatment in private sanatoriums ranges from $15 to $30 a week. To get proper conditions at a health resort will demand $65 to $100 a month. There are a few semi-charitable sanatoriums where the rates are from $7 to $12 a week. In city, county or provincial hospitals the rate is usually from $5 to $7 a week, but, in almost all, patients who cannot afford this are cared for free at public expense. At the sanatorium you will not only get the advantage of better climatic conditions, or at least of country air, but what is far more important, constant medical supervision and the careful teaching and training of physicians and nurses in how to conduct your life and **how to care for your case in the future.** A complete cure will usually not be accomplished at the sanatorium, for you would have to stay there too long a time for that. The activity of your trouble, however, will be stopped, you will lose most of your symptoms and will probably feel perfectly well. This is a dangerous time, for you are not really well and you may be tempted to be imprudent, but if you have been a good pupil and have learned how to live, you will avoid this danger, **and will know how you must live when you go home.** By all means stay at the sanatorium as long as the physician there advises, or as long, at least, as your means will permit.

Value of Sanatorium treatment.

When you are discharged as an arrested case, you will usually go home able cautiously to resume your work, and, by carrying out instructions you will generally be restored to good health in two or three years. You must remember, however, that unlike pneumonia, measles and other acute infectious diseases, after tuberculosis **you can relapse and get sick again at any rate,** when dissipation, overwork, unhealthy conditions of life, or too little food, or certain sicknesses like grippe or typhoid, lower your vitality below the danger point and enable the disease to get a new hold on you. **Therefore your staying well will depend upon eternal vigilance and common sense.**

Life when you go home.

If there is no dispensary or sanatorium available for you and you cannot possibly get proper conditions and good medical treatment away from home, don't lose heart. While change of climate under proper conditions is valuable, without those conditions it is useless and in any case it is never the first or most important thing, and it is possible for you to win out with sense and determination by taking the treatment at home. **Go to a good doctor, not so much to get medicines as to have him teach you how to live, and to guide your life and watch your case carefully. Keep for him a written record of exactly what you do every day, and how you feel both physically and mentally, and the run of your temperature every four hours. Let him see this once or twice a week and advise you accordingly. Apply the teachings of this booklet to your daily life and carefully follow all its instructions, especially those meant to prevent the spread of the disease in your family.**

Home treatment when a sanatorium is impossible.

Get a bright sunny room with two outside windows and a southern exposure if possible and the use of a roof to sit out on in good weather. If your town is dusty, try to get rooms on the top floor of a high building, for here you will escape much of the dust which is irritating to your lungs and throat.

Your room.

Try and get the best and most nourishing food possible, as much meat as you can, once or even twice a day, preferably broiled or roasted, and as much good milk, butter and eggs as you can afford. While milk and eggs are valuable if you can digest them well, they will do you no good if they upset your stomach; other foods can take their place. A good amount of green vegetables in the diet is necessary.

Food.

If you can stop your work for six months, do so and begin a rest cure at home on your porch or in your back yard, or, if this is not possible, in your room, with every window wide open and yourself well wrapped up in cold weather. Carry out the cure faithfully by constant rest in the fresh air in a reclining position, until your fever, for a month at least, has disappeared. Then resume exercise with the greatest care.

Rest in the open air.

Keep your body clean by a weekly, or better, a daily bath, and in winter wear sufficient warm but light clothing; but do not bundle up so warmly as to make you sweat or tire you. Do not muffle your throat up in shawls, or wear chest protector. Have your room kept as clean as possible with soap and water and a scrub brush, and keep all blinds and window shades wide open so as to let in all the air and sunlight you can. Remember, it is better to let the sun fade your carpets and pictures than to keep these unfaded and kill yourself. **If you are properly wrapped up, all the windows can be open day and night in winter as well as in summer. Night air is just as good and just as necessary as day air.** If you are not used to fresh air, go about it gradually, opening each window a little further each night **until they are all as wide open as they can be,** half down from the top and half up from the bottom. Get, if you can possibly afford it, an easy reclining chair **with a flat back** and with some means of keeping your legs up off the ground, and except when it rains spend your whole days out of doors, but spend very bitter or rainy and windy days in your room with all the windows open. If you have to sleep in a room instead of on a porch, keep all the windows wide open, have plenty of warm but light bed clothes and keep your bed near one of the windows, or use a window tent. Always dress and undress in a warm room.

The control of your exercise is one of the most important things in the treatment. **At first, avoid all exercise, for many more consumptives are killed from over-exercise than are ever hurt by too much rest.** Keep this up until you can notice no fever over 99'5 in the afternoon and until you are gaining weight. When you begin to exercise, let it at first be for not more than two or three minutes, slowly increasing it by a minute or so each day, and stopping at once if it brings back your fever, or if it makes you tired or short of breath.

Exercise.

Never swallow your spit under any circumstances, because in this way you can infect your bowels and might get a hopeless and terrible form of this disease. If you are hoarse, or if your throat is sore, **do not talk at all,** or as little as possible. **Do not smoke** and let nobody smoke in your room under any circumstances, and avoid all smoky and dusty places. By living in this way, people all over this country have been cured, and are being cured every year of this disease, and **there is no reason why you should not get well.** Do not suppose, however, that you are well as soon as most of your symptoms stop; **the disease is still present and active long after you can notice no signs of it,** and if you get careless or forgetful and do imprudent things, **it can come back on you.** Therefore, keep up a modified form of the cure for at least a year after you feel well, **and for all the rest of your life live carefully, remembering what you have escaped.** If you fight it out bravely on these lines, drive away the "blues" and insist on being careful, you will be surprised to find how well you will do and how you will gain weight, strength and appetite and lose your symptoms.

Further hints.

After most acute diseases are over, the patient is as well as ever, barring complications, and is often somewhat more resistant to a new attack of the same malady than

a man who has never had the disease. Tuberculosis, however, is a chronic disease, and has no limited period of duration, but, **untreated, tends to run on indefinitely** till it kills the patient. A cured case is more, not less susceptible to a reinfection or a relapse than before; hence, many doctors prefer to call the final result "an arrest" rather than "a cure." As long as the patient can return safely to work and by wise living be reasonably sure of staying well and workable, it makes little difference which term we use **if he is made to understand the facts.**

Difference between "Arrest" and "Cure" in Tuberculosis.

When the tuberculosis patient leaves the sanatorium, granted his case was discovered early and was a light one, his trouble is usually what is called "arrested." He has lost all his bad symptoms and often all symptoms whatsoever. He has no fever or fast pulse, weighs more than usual and generally has no cough or expectoration. This tempts him to suppose he need take no more care of himself than he did before he was sick, a most dangerous idea. The wall of scar tissues which shuts in the disease is not fully formed and will not be for two or three years, and if he goes home to unwise or unhygienic living conditions, the symptoms he has lost will slowly but surely return and others with them, and in a year "the last state of that man will be worse than the first." Many foolish patients, gifted by nature with fine constitutions, have several such relapses, each followed by a new "arrest," and they are almost certain to break down again finally because they do not have the sense or will power to live wisely when they leave off the regular taking of the cure. When, however, a patient has taken to heart the lessons of the sanatorium or home doctor, or this pamphlet, and lives wisely and carefully, he can, slowly, but surely, continue to gain strength and build up a strong wall of protective scar tissue around the disease, and finally to accomplish that permanent arrest, with restoration of full working efficiency under reasonable methods of living, which is called a "cure." Much of the world's best work, whether mental or manual, has been done by men who at one time in their lives suffered with tuberculosis. **Cure, then, is possible,** but to maintain it demands not an invalid's life always scared of a relapse, **but a constant intelligent remembering of the facts learned** and a denial of certain over-indulgences both of work and pleasure which medical science has proved are not safe for the recovered consumptive.

The danger time.

Finally remember that your getting well, however good your doctor is, depends chiefly on yourself, on **Your common-sense, on Your intelligence, on Your determination.** Make up your mind you **will get well;** be willing to deny yourself any pleasure, however much you love it, if it is harmful; be ready to do anything, however tedious and disagreeable, if it is helpful. If you are sick, fight bravely to be cheerful and bright; if you are well and living with a sick person, be sensible and do not cruelly make him miserable by your fears, but rather render him harmless to you by teaching him to carry out the above rules. In this way many men, women, and children can be saved and returned to useful activity, who under the present carelessness as to these matters and doomed to death.

Your part in the cure.

IX. IF YOU OR YOUR FAMILY OR SOME ONE IN YOUR HOUSE HAS THE DISEASE, WHAT MUST BE DONE TO KEEP IT FROM SPREADING TO OTHERS?

If proper and conscientious care is taken, there need be no **danger to you at all from a consumptive living in the house with you.** However, it takes **eternal vigilance on the part of the patient** not to transgress in these matters and to harm other people. The patient should always spit in a piece of paper, or a paper napkin which can be burned up immediately, or put in a box or paper bag **protected from flies,** and the whole burned up later. Such papers should be used but once, and as they cost next to nothing, the use of a fresh one every time will not be expensive. The patient must be careful not to soil his hands from these papers and should, as has

Disposal of sputum.

already been stated, wash his hands and mouth often. A regular cardboard sputum box, or cup, with a tin frame and paper containers can be bought at any up to date drug store for about 25 cents. If this has a lid to keep the flies from its contents, and if it is filled with sawdust when ready for burning and burned up at once, it is satisfactory. If a spittoon must be used, put into it a quart of water and a tablespoonful of pure carbolic acid each morning and empty this down the water closet the next morning. Where no water closet is available, bury it in a hole in the ground far from the house. Such spittoons, however, must be cleaned by frequent boiling if they are to be sanitary. **It is most important that the patient cover his mouth with a cloth or paper whenever he coughs, and such cloths or paper must be burned after use.** If, by accident, any spit should get on the floor, on the clothes or on the furniture, pour over it at once a mixture of two tablespoonfuls of carbolic acid (which is poison) in a pint of hot water, and let it soak two hours, at least, and then clean the place carefully. See that the patient's cup, glass, plate, knife and fork are scalded in hot water and washing soda and wiped dry after use. His napkins, towels, handkerchiefs, pillow cases and sheets must be well boiled before going to the wash. Avoid raising dust by sweeping, as this scatters the germs around. The use of wet tea leaves, wet bits of paper, or wet sawdust on the floor before sweeping can prevent this dust. **If possible, keep all flies out of the sick room, but in any case never let them get at the patient's spit, either in the spittoon, on papers, on handkerchiefs, or on his hands or lips.** If the patient spits much the beard and moustache should be shaved close, for they will get soiled with spit.

Cheerfulness and good bodily health the best protection for the family of the invalid.

The best preventives of infection for those around the patient are healthy and cheerful minds. Therefore, see to it that every one who lives with a tuberculous patient or especially with a consumptive, keeps as well, strong, and cheerful as possible. One who is nursing a consumptive should be careful to get a brisk walk in the fresh air for at least an hour daily. **In this way there need be absolutely no danger to any one living with him, nor need he be in danger of reinfecting himself,** and it is entirely unnecessary as well as very cruel, to treat these patients, as is so often done, as though they had smallpox and could infect you at once.

X. HOW MUST YOU LIVE AFTER YOU ARE APPARENTLY WELL AGAIN SO AS TO REMAIN WELL?

The most difficult time for the patient comes after his doctor, or the sanatorium, has discharged him, and he begins to resume his work and his ordinary life. At this time he has to meet the difficult question of a return to active life and to some sort of work by which he can support himself and his family. Whether or not he will remain well after he goes back to work rests largely in his own hands **and depends on his will-power, his self-control and his common sense,** and upon his applying in his daily life all the knowledge which he has gained while under treatment. He must never forget that just as the disease has taken many years to develop to the point where it made him sick, so it will be several years, even in mild cases, before his lungs will be entirely healed.

Why you must be careful.

The chief reason why patients become sick again is because, thinking they are just as well as they ever were, they are imprudent and neglect proper care of themselves. While you can get well of tuberculosis and be able to do good hard work, **you can never again risk putting an unlimited tax on your strength regardless of the consequences, and must be always careful to think before you act.** On the other hand, do not go around morbidly dreading a return of this disease, for a cheerful, hopeful mental attitude, is most important for health. Remember, you are not yet cured, but determine that you will accomplish that cure. However well you may look or feel, the longest part of your cure lies ahead of you. Doctors may have told you "your lungs are as clear as a bell," but even so, do not consider yourself a cure. The doctor cannot

always be sure of the condition of the deeper parts of your lungs, and his failure to find trouble at his examination does not prove that there cannot be disease in the lung.

When you come home, your family will probably tell you that you look perfectly well and that you are lazy if you do not work as hard as ou did or play as hard as you used to. But do not mind what they say, for **such advice is dangerous.** You know how to handle your case much better than they do, and many patients break down because they let their relatives or friends convince them that they areable to do hard work or harder play. Whether or not you will complete your cure successfully and get well depends largely on the common sense and judgment you use in regulating your daily life. Never forget you have had tuberculosis, and while not being foolishly anxious, always live twice as carefully as you lived before. Many advanced cases have gotten well by painstaking care of themselves, while many excellent early cases have finally died as a result of their own cocksureness and carelessness. **It needs common sense and sand to get well and you must use both.**

Importance to the patient of courage and intelligence.

Tuberculosis is a disease which tends to have intervals during which the symptoms are less active, and other intervals when the patient relapses and the disease becomes more active again. This is often called "grippe" or "just a cold," but do not be misled by such comforting names, but treat it as a relapse. **Such relapses can occur easily even in the mildest cases, and must always be considered as serious and treated at once.** They are usually shown by a rapid or steady falling off of weight, a return of an undue sense of tiredness, a beginning again of cough and expectoration, and the reappearance of a little fever. If such symptoms appear, do not put off doing something until next week, but go back to absolute, or partial, rest **at once.** Often a short period of rest in bed will clear up all these anxious symptoms, and you will **make** everything come out all right, but do not sit around and do nothing **hoping** that all will come out all right. Neglect of these warning symptoms has been the cause of many relapses and deaths.

Return of symptoms.

As to your home life, follow the instructions already given about your rooms and general accommodations, and remember that if you have to work indoors, all day to support yourself it is all the more important that you should have all the fresh air possible out of work hours to make up the difference. When one first returns to work, and may be somewhat overtaxed by it, it is wise to spend all the time out of work hours resting in the open air, and only when you have determined that you can do the work satisfactorily is it safe to use your hours at home for exercise or recreation.

Home conditions.

Be careful in the choice of your amusements. Many of those we like best are foolish or dangerous. Stay away from dances or dance halls, which are always dusty and overheated and demand overexertion, and from "movies," which are rarely well ventilated; avoid all crowded, close, dusty places where you run **a big chance of catching grippe,** which so often wakes these cases up again. Try to let your amusements be always in the open air. Until you are **very** well you should cut out all night amusements.

Choice of amusements.

Try to see that your workplace is sunny and airy, and above all, not dusty. Teach your fellow-workmen what you have learned about the importance of fresh air and the danger of spitting carelessly. Keep regular hours and always try to get a little rest after eating before you go back to work.

Your workplace.

As has been already said, wash your hands and mouth often and be careful to keep your teeth clean and in good condition. If your work proves hard and tiring,

Personal hygiene.

spend all Sundays in bed with your windows open, and be careful not to injure your family or friends by carelessness at such times as they are around you. **Go to bed early and always try to get at least eight hours sleep.** Take at least one warm bath in the week, and, if you are used to them and they help you, a cold sponge every morning. Do not let yourself become constipated, but do not get into the habit of taking strong medicines.

XI. WHAT WORK MAY ONE DO AFTER THE DISEASE HAS BEEN THOROUGHLY ARRESTED?

In the majority of cases it is better for the patient to take up the same work he was doing before he broke down, unless it is very dusty or damp, or exposes him to irritating gases or to severe physical strain, or unless it is one whose conditions caused his first breakdown. **If you will take the best care you can of the fourteen or sixteen hours you are not at work, the other eight or ten will take care of themselves, provided the place where you work has a reasonable amount of daylight, or better, sunlight, and is well ventilated.** Take all the rest you can during the lunch hour and rest when you get home in the evening. Try to avoid rushing from your eating to your work, letting a short period of quiet rest intervene, and if you find yourself getting very tired at your work, drink a milkshake in the middle of the morning and the afternoon. It will bring you to the end of your day less tired and feeling much better.

Your old job usually the best.

Do not look for a "light job on the farm." There are none such. An indoor job you are used to, unless it is very unhealthy, means, despite certain disadvantages, less exposure, less physical and mental exertion, more regular hours and better wages, and will allow you to get better home conditions. Therefore, if you can, go back to your old work, but when you are off duty devote your entire time to the rest cure for at least the first year, and longer if your case was an advanced one. **Very possible it was not your work, but what you did in your fourteen hours of leisure that was responsible for your breakdown.** How you spend these hours of leisure will largely decide whether you remain well or not.

Difficulty of finding light outdoor work.

XII. HOW SOON MAY ONE RETURN TO WORK AFTER THE DISEASE IS ARRESTED?

This is usually a question of how long you can stay away from it? You should, if possible, have been without active symptoms, such as bad cough, free expectoration, fever, sweats, tiredness, weakness, shortness of breath, for at least six months. The earlier you have to return to work, the more careful you must be. Do not try to see how much you can do, but how much you can save yourself by common sense and forethought. If you can, start on half time or part time until you have tried yourself out, and then gradually increase it. A work which will break you down if you take it up all at once may often be done safely if you take it up by degrees, doing a little more each week until you work full time.

It is important that the doctor who will watch you should examine you at the end of your cure, and **make a record of his findings,** especially if you are returning from a sanatorium, so that he may know just what your condition is at that time, and thus have a standard of comparison when he re-examines you from time to time. At first let him go over you carefully each month, then every three months, and then every six months for a long time.

Skilful medical supervision.

Finally, above all things fight for cheerfulness, stop thinking of your own woes and troubles, take an interest in other people and try to help them, and you will find that the sunshine you bring them will be reflected back into your own life.

"Look up and not down, look forward and not backward,
Look out and not in, and lend a hand."

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